

Archives of Biochemistry and Biophysics

Editors

E. S. G. BARRÓN
PAUL D. BOYER
JESSE P. GREENSTEIN
E. NEWTON HARVEY
J. G. KIRKWOOD
HENRY LARDY
K. LINDERSTRØM-LANG
C. M. McCAY
THOMAS L. McMEEKIN
H. S. MASON
A. NEUBERGER
F. F. NORD
E. C. POLLARD
E. W. PUTNAM
C. RIMINGTON
JOHN C. SHEEHAN
H. THEORELL
K. V. THIMANN
W. W. UMBREIT
C. H. WERKMAN
R. J. WILLIAMS
R. W. G. WYCKOFF



VOLUME 66

1957

ACADEMIC PRESS INC., PUBLISHERS

Archives of Biochemistry and Biophysics



Copyright ©, 1957, by Academic Press Inc.
Made in United States of America

CONTENTS OF VOLUME 66

NUMBER 1, JANUARY 1957

EDWARD J. KUCHINSKAS AND VINCENT DU VIGNEAUD. An Increased Vitamin B ₆ Requirement in the Rat on a Diet Containing L-Penicillamine.....	1
S. FRIEDMAN, A. B. GALUN AND G. FRAENKEL. Isolation and Physiological Action of (+) Carnitine.....	10
BRUCE A. MCFADDEN AND DANIEL E. ATKINSON. The Biochemistry of Hydrogenomonas. V. Factors Affecting Autotrophic Fixation of Carbon Dioxide.....	16
LEONARD HORWITZ. Observations on the Oxyhydrogen Reaction in <i>Scenedesmus</i> and Its Relation to Respiration and Photosynthesis.....	23
LEONARD HORWITZ AND F. L. ALLEN. Oxygen Evolution and Photo-reduction in Adapted <i>Scenedesmus</i>	45
PAUL O. P. Ts'o, LUTHER EGGMAN AND JEROME VINOGRAD. The Interaction of Myxomyosin with ATP.....	64
ULRICH WESTPHAL. Steroid-Protein Interactions. III. Spectrophotometric Demonstration of Interaction between Proteins and Progesterone, Deoxycorticosterone and Cortisol.....	71
ANDRES O. M. STOPPANI AND JAIME A. BRIGNONE. Factors Affecting Succinoxidase Sensitivity Toward Oxidation with BAL....	91
J. J. BLUM, T. D. KERWIN AND W. J. BOWEN. Dependence of Length of Muscle Fibers upon ATP Concentration.....	100
JAMES S. DINNING, JOHN T. SIME, PHIL S. WORK, BARBARA ALLEN AND PAUL L. DAY. The Metabolic Conversion of Folic Acid and Citrovorum Factor to a Diazotizable Amine.....	114
W. J. MCALEER AND M. A. KOZLOWSKI. Application of Zaffaroni-type Partition Systems to the Paper Chromatography of Steroidal Sapogenins.....	120
W. J. MCALEER AND M. A. KOZLOWSKI. Application of the I ₂ -KI Color Test to Some Oxygenated Progesterones.....	125
E. S. KLINE AND L. S. BARON. Xylose Metabolism in Genetic Variants of <i>Salmonella typhosa</i>	128
D. F. DECKER, R. U. BYERRUM AND C. A. HOPPERT. A Study of the Distribution and Retention of Cadmium-115 in the Albino Rat	140
PAUL F. KRUSE, JR., M. K. PATTERSON, JR. AND THOMAS A. MCCOY. The Isolation of Glycine, Alanine, Leucine, Arginine, and Glutamic Acid for Radiometric Assay in Tracer Experiments.....	146

VIRGINIA RICHMOND, RANWEL CAPUTTO AND STEWART WOLF. Fractionation of the Nondialyzable, Soluble Components of Gastric Contents by Chromatography on Amberlite IRC-50.	155
D. L. WOERNLEY, C. CARRUTHERS, L. REGENT AND A. BAUMLER. The Effect of Extraction Procedures on Sedimentation Properties of Epidermal Proteins.	167
F. R. MRAZ, MARIE LENOIR, J. J. PINAJIAN AND H. PATRICK. Influence of Potassium and Sodium on Uptake and Retention of Cesium-134 in Rats.	177
MITSURU NAKAMURA AND SIGURDUR JONSSON. The effect of Antimetabolites on the Growth of <i>Endamoeba histolytica</i> . I. Purine and Pyrimidine Analogs.	183
GALE W. RAFTER AND SIDNEY P. COLOWICK. A Diaphorase-Like Action of 3-Phosphoglyceraldehyde Dehydrogenase.	190
ROBERT E. ASNIS. The Reduction of Furacin by Cell-Free Extracts of Furacin-Resistant and Parent Susceptible Strains of <i>Escherichia coli</i>	208
W. W. WELLS. Coprostanol Formation. I. The Effects of Sodium Taurocholate and Tween 80 on the Sterol Composition of Rat Feces.	217
D. L. COLEMAN AND C. A. BAUMANN. Intestinal Sterols. III. Effects of Age, Sex and Diet.	226
VIRGINIA R. WILLIAMS, E. ANNE ANDREWS AND JOHN F. CHRISTMAN. Studies on a Biotin-Hexokinase Interrelationship.	234
LETTERS TO THE EDITORS	
EFRAIM RACKER AND ELEANOR SCHROEDER. Formation and Utilization of Octulose-8-Phosphate by Transaldolase and Transketolase.	241
D. G. O'SULLIVAN AND P. W. SADLER. Biological Activity and Substituent Effects.	243
E. T. DUMITRU AND R. R. GARRETT. Solubilization of Rat-Tail Tendon Collagen.	245
P. RIESER AND R. J. RUTMAN. On the Nature of the Clotting Defect in Irradiated Fibrinogen.	247
R. F. POWNING AND C. C. KRATZING. The Reduction of Pyridine Coenzymes at a Mercury Electrode.	249
BOOK REVIEWS.	253

NUMBER 2, FEBRUARY 1957

HELMUT KEWITZ. A Specific Antidote against Lethal Alkyl Phosphate Intoxication. III. Repair of Chemical Lesion.	263
---	-----

HELMUT KEWITZ AND DAVID NACHMANSOHN. A Specific Antidote against Lethal Alkyl Phosphate Intoxication. IV. Effects in Brain.	271
LEONARD JURD. The Detection of Aromatic Acids in Plant Extracts by the Ultraviolet Absorption Spectra of Their Ions.	284
ELLEN L. TALMAN, ROBERT F. LABBE AND ROBERT A. ALDRICH. Porphyrin Metabolism. IV. Molecular Structure of Acetamide Derivatives Affecting Porphyrin Metabolism.	289
ROSE H. BROWN, GEORGE D. DUDA, SEYMOUR KORKES AND PHILIP HANDLER. A Colorimetric Micromethod for Determination of Ammonia; the Ammonia Content of Rat Tissues and Human Plasma.	301
T. NAKAYAMA, C. O. CHICHESTER, A. LUKTON AND G. MACKINNEY. Phytoene Production in <i>Phycomyces</i>	310
JACOB J. BLUM AND DONALD J. JENDEN. Rate Behavior and Concentration Profiles in Geometrically Constrained Enzyme Systems.	316
JACK B. WOLFE, BARBARA B. BRITTON AND HENRY I. NAKADA. Glucosamine Degradation by <i>Escherichia coli</i> . III. Isolation and Studies of "Phosphoglucosaminisomerase".	333
SJOERD L. BONTING AND MARION JONES. Determination of Microgram Quantities of Deoxyribonucleic Acid and Protein in Tissues Grown <i>in Vitro</i>	340
RICHARD EGAN, HARRY O. MICHEL, ROBERT SCHLUETER AND BERNARD J. JANDORF. Physicochemical Investigation of the Chymotrypsins. I. Demonstration of Heterogeneity of α -Chymotrypsin by Countercurrent Electrophoresis.	354
RICHARD EGAN, HARRY O. MICHEL, ROBERT SCHLUETER AND BERNARD J. JANDORF. Physicochemical Investigation of the Chymotrypsins. II. On the Mechanism of Dimerization of Chymotrypsin.	366
ROY L. WHISTLER, H. H. KRAMER AND ROBERT D. SMITH. Effect of Certain Genetic Factors on the Sugars Produced in Corn Kernels at Different Stages of Development.	374
GEORGE J. ALEXANDER AND ERWIN SCHWENK. Studies on Biosynthesis of Cholesterol. IX. Zymosterol as a Precursor of Cholesterol.	381
M. H. APRISON AND P. NATHAN. Determination of Acetylcholine in Small Samples of Fresh Brain Tissue.	388
NORMAN H. GRANT AND KENNETH C. ROBBINS. Studies on Porcine Elastase and Proelastase.	396

LEON SINGER, M. MAQSOOD, A. B. MEDLEN AND C. L. COMAR. Endogenous and Biliary Excretion of Calcium-45 and Strontium-89.....	404
GORDON TOLLIN AND SIDNEY W. FOX. Enzymic Synthesis of Peptide Bonds. VII. Competition between Some Benzoylamino Acids and Benzoyldipeptides in Papain-Catalyzed Reactions with Glycinanilide.....	411
GORDON TOLLIN AND SIDNEY W. FOX. Enzymic Synthesis of Peptide Bonds. VIII. Activation Phenomena in the Papain-Catalyzed Synthesis of Peptide Bonds.....	418
SERGE N. TIMASHEFF AND IGNACIO TINOCO, JR. Light Scattering of Isoionic Conalbumin.....	427
FRANK H. STODOLA, G. E. N. NELSON AND DEAN J. SPENCE. The Separation of Gibberelin A and Gibberellic Acid on Buffered Partition Columns.....	438
M. Z. BARAKAT, S. K. SHEHAB AND M. M. EL-SADR. The Gasometric Determination of Urinary Urea by <i>N</i> -Bromosuccinimide...	444
SAM J. PILIERO AND BEN PANSKY. The Effects of Low Pressure and Inanition on Serum Vitamin A Levels and Electrophoretic Patterns in the Adrenalectomized Rat.....	454
ALEXANDER C. ZUCHLEWSKI AND O. H. GAEBLER. Changes in the Activity of Transaminases and L-Glutamic Acid Dehydrogenase Induced by Growth Hormone.....	463
Z. KIRÁLY AND G. L. FARKAS. On the Role of Ascorbic Oxidase in the Parasitically Increased Respiration of Wheat.....	474
G. W. KIDDER AND VIRGINIA C. DEWEY. Deazapurines as Growth Inhibitors.....	486
BERT S. GORTON, CHARLES G. SKINNER AND ROBERT E. EAKIN. Activity of Some 6- (Substituted) Purines on the Development of the Moss <i>Tortella caespitosa</i>	493
LETTERS TO THE EDITORS	
G. CURZON. The Excretion of Indoles in Argentaffinoma.....	497
ROLF M. HOCHSTER. Pyridine Nucleotide Specificities and Rates of Formation of Glucose-6-phosphate and of 6-Phosphogluconate Dehydrogenases in <i>Aspergillus flavus-oryzae</i>	499
WILLIAM A. BULEN AND D. S. FREAR. Effect of Orthophosphite on Respiration, Growth and Nitrogen Fixation of <i>Azotobacter vinelandii</i>	502
B. G. RAO AND R. D. H. HEARD. Biogenesis of the Corticosteroids. II. Conversion of C ¹⁴ -Progesterone in Cell-free Hog Adrenal Preparations.....	504

Book Reviews	507
Books Received for Review	514
Author Index	516
Subject Index	518
Index of Book Reviews.....	520

